

## CLAIMS

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1. A method of transmitting traffic from a plurality of users having  
respective service types over an ATM virtual circuit connection, the method  
including storing in a look-up table information for each said user  
10 comprising a service type indicator, a circuit identifier and a cell length  
indicator for that user, segmenting each user's traffic and packaging the  
segmented user traffic into minicells, multiplexing the minicells from a  
plurality of users into ATM cells each ATM cell having a header  
incorporating a connection identifier field, entering in said connection  
15 identifier field the respective circuit identifier for each said user, transmitting  
the ATM cells over the connection, determining from the look-up table for  
each said user the service type and the length of the minicells associated  
with that user whereby to effect delineation of the minicells contained in  
each said ATM cell, and de-multiplexing the delineated minicells whereby  
20 to recover each user traffic.

2. A method as claimed in claim 1, wherein a plurality of virtual  
channels are configured on the same link.

25 3. A method as claimed in claim 2, wherein said stored information is  
derived from information transmitted in a service specific field.

4. A method as claimed in claim 1, wherein a sequence  
number is provided for each minicell.

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5. A method as claimed in claim 4, wherein said sequence number is  
contained in a minicell pointer.

6. A method as claimed in claim 5, wherein a minicell pointer is  
35 provided in every minicell.

7. A method as claimed in claim 5, wherein omission or corruption of minicells in a sequence is detected and said omitted or corrupted minicells are selectively retransmitted.

5 8. A method as claimed in claim 1, wherein a sequence number is provided for each ATM cell

9. A method as claimed in claim 8, wherein said ATM sequence number is defined by a single bit.

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10. A method as claimed in claim 1, wherein at least some said user service types are allocated variable length minicells, and wherein said stored user information is updated with the current cell length.

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